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**Amendment to the Claims**:

This listing of claims replaces all prior versions, and listings, of claims in the application:

1. (**Currently Amended**) A method of transmitting optical signals in an optical communication system, comprising:

receiving an [[optical]] input **signal** that has a first data rate;

splitting the [[optical]] input **signal** into a plurality of **sub signals which carry different split portions of information carried in the input signal;**

**using the sub signals to control a plurality of tunable optical transmitters to produce a plurality of optical signals of different** sub-wavelengths **that carry the different split portions of the information, respectively**, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of sub-wavelengths that is close to or greater than a spectral efficiency of the optical input; **and**

combining the plurality of **the optical signals of different** sub-wavelengths **into a single fiber to transmit to a destination**.

2. (**Currently Amended**) The method of claim 1, wherein a total bandwidth occupied by the sub-wavelengths is within a same ITU window ~~**of the optical input**~~.

3. (**Currently Amended**) The method of claim 2, wherein the total bandwidth occupied by the sub-wavelengths is less than a bandwidth occupied by the [[optical]] input **signal**.

4. (**Currently Amended**) The method of claim 2, wherein the total bandwidth occupied by the sub-wavelengths is 5 times or less than a bandwidth occupied by the [[optical]] input **signal**.

Claims 5-8: Canceled.

9. (**Currently Amended**) The method of claim 1, ~~wherein a plurality of optical transmitters are provided to produce the plurality of sub wavelengths, each of an optical transmitter including~~ **further comprising using** a wavelength locker **to control a corresponding optical transmitter against a drift in wavelength**.

Claims 10-16: Canceled.

17. **(Currently amended)** The method of claim **1** [[16]], wherein a number of sub-wavelengths is in the range of 4 to 32.

18. (Original) The method of claim 1, wherein the first data rate is 10 Gb/sec or more.

19. (Original) The method of claim 1, wherein a sub-wavelength data rate of each subwavelength 50 Gb/s or less, and spacing of the sub-wavelengths is 25 GHz or less.

20. (Original) The method of claim 1, wherein a sub-wavelength data rate of each subwavelength is 10 Gb/s or less, and spacing of the subwavelengths is in the range of 5 to about 25 GHz.

21. (Original) The method of claim 1, wherein a sub-wavelength data rate of each subwavelength is 10 Gb/s or less, and spacing of the subwavelengths is in the range of to about 6 to 25 GHz.

22. (Original) The method of claim 1, wherein a sub-wavelength data rate of each subwavelength is 2.5 Gb/s or less, and spacing of the subwavelengths is in the range of to about 3 to 12.5 GHz.

23. **(Currently amended)** The method of claim 1, wherein a number of subwavelengths is 2 and a sub-wavelength ~~spacing~~ **spacing** is in the range of 20 to about 100 GHz.

24. **(Currently amended)** The method of claim 1, wherein a number of subwavelengths is 8 and a sub-wavelength ~~spacing~~ **spacing** is in the range of 5 to about 25 GHz.

25. **(Currently amended)** The method of claim 1, wherein a number of subwavelengths is 4 and a sub-wavelength ~~spacing~~ **spacing** is in the range of 6 to about 25 GHz.

26. **(Currently amended)** The method of claim 1, wherein a number of subwavelengths is 16 and a sub-wavelength ~~spacing~~ **spacing** is in the range of 3 to about 12.5 GHz.

27. **(Currently amended)** The method of claim 1, wherein a number of subwavelengths is 4 and a sub-wavelength ~~spacing~~ **spacing** is in the range of 3 to about 12.5 GHz.

Claims 28-51: Canceled.

52. (**New**) The method of claim 1, further comprising:

receiving the plurality of the optical signals of different sub-wavelengths from the single fiber at the destination;

splitting the received plurality of the optical signals of different sub-wavelengths into separate optical signals at the different sub-wavelengths;

using different optical receivers to receive the separated optical signals at the different sub-wavelengths, respectively, and to produce electrical output signals representing the separated optical signals, respectively; and

combining the electrical output signals into an output signal at the first data rate.

53. (**New**) The method of claim 52, wherein the optical receivers are tunable in wavelength.

54. (**New**) A communication system, comprising:

a signal demultiplexer to separate an input signal at a high date rate into a plurality of signals each at a low data rate, wherein the plurality of signals carry different split portions of information carried in the input signal;

a plurality of tunable optical transmitters, respectively controlled by the plurality of signals, to produce a plurality of optical signals of different sub-wavelengths that carry the different split portions of the information, respectively, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of sub-wavelengths that is close to or greater than a spectral efficiency of the optical input;

a plurality of wave lockers respectively coupled to the tunable optical transmitters, each wave locker controlling a corresponding tunable optical transmitter against a drift in wavelength in the tunable optical transmitter; and

an optical element to couple the plurality of the optical signals of different sub-wavelengths into a single fiber to transmit to a destination.

55. (**New**) The system as in claim 54, further comprising a receiver terminal which comprises:

an optical receiving element to separate the plurality of the optical signals of different sub-wavelengths received from the signal fiber at the destination into separate optical signals at the different sub-wavelengths;

a plurality of optical receivers each tunable in wavelength to receive the separate optical signals, respectively, and to produce electrical output signals representing the separated optical signals, respectively; and

a unit to combine the electrical output signals into an output signal at the high data rate.

56. (**New**) A communication system, comprising:

a signal demultiplexer to separate an input signal at a high date rate into a plurality of signals each at a low data rate, wherein the plurality of signals carry different split portions of information carried in the input signal;

a single optical transmitter to produce an optical carrier beam;

an optical modulator to modulate the optical carrier beam, response to the plurality signals, to produce a plurality of optical subcarriers at different optical sub-wavelengths that

carry the different split portions of the information, respectively, wherein the plurality of sub-wavelengths are spaced sufficiently close in wavelength to provide a spectral efficiency of all the sub-wavelengths of the plurality of sub-wavelengths that is close to or greater than a spectral efficiency of the optical input; and

an optical element to couple the plurality of the optical signals of different sub-wavelengths into a single fiber to transmit to a destination.